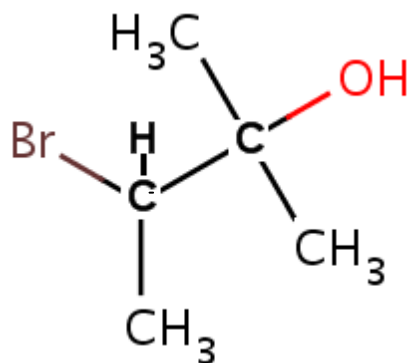


Question: What is the correct IUPAC name of the organic molecule shown below?

The substance below is **3-bromo-2-methylbutan-2-ol**



- parent hydrocarbon chain is 4 carbon atoms in length
- parent functional group is -OH /hydroxy group *
- the hydroxy group is assigned the lowest carbon number of 2
*so far, we have **butan-2-ol***
- side chains are -bromo and -methyl #
- named in alphabetical order, therefore bromo before methyl
- sticking with -OH on carbon number 2
*therefore, **3-bromo-2-methylbutan-2-ol***

Why is the molecule above **not** called...

i) 1,1-dimethyl-2-bromopropan-1-ol

The longest continuous chain of carbon atoms (parent hydrocarbon chain) is 4 carbon atoms in length, but propan-1-ol only has a longest chain of 3 carbon atoms long so therefore cannot be propan-1-ol

ii) 2-bromo-3-hydroxy-3-methylbutane

This is not an alkane as there is the hydroxy functional group (-OH) present, therefore this is an alcohol

iii) 2-methyl-3-bromobutan-2-ol

The side chains must be written in alphabetical order, therefore b in -bromo before m in -methyl

iv) 2-bromo-3-methylbutan-3-ol

The functional group must be assigned the lowest possible number of the carbon atom, which is not 3 but 2

* occasionally there is more than 1 functional group present, the order of precedence is

NH_4^+
carboxylic acid
ester
amides
aldehydes
ketones
alcohols
amines

the common side chains are (must be in alphabetical order)

- Br bromo
- Cl chloro
- C_2H_5 ethyl
- OH hydroxy
- I iodo
- -CH_3 methyl
- = O oxy